

**REMARKS**

Applicants respectfully request reconsideration of the instant application in view of the above amendments and/or the following remarks. Claims 1, 4, 13, 14 and 16 have been amended to provide clarification, better track current business practices, and/or correct typographical informalities, and claims 21-28 have been added by way of this Response. Applicants submit that support for new and amended claims may be found throughout the originally filed specification, drawings and claims and that no new matter has been added by way of this Amendment/Response. Applicants further maintain that the claims in their original form are in condition for allowance and explicitly reserve the right to add/pursue the claims as originally filed at a later date and/or in one or more continuation applications. Claims 1, 2, 4, 5, 7, 9, 10, 12-17 and 19-28 are currently pending.

**Claim Objections**

The Examiner has objected to claims 14 and 16 as allegedly containing particular informalities. Specifically, the Examiner has alleged that claims 14 and 16 contain language that the Examiner considers "awkward" (August 5, 2008 Office Action, p. 2, § 3). Though Applicants respectfully traverse the objection and maintain that the claim language is clear and unambiguous, Applicants have amended claims 14 and 16 to provide clarification. Accordingly, Applicants respectfully submit that the Examiner's objections to the claims have been overcome.

Rejections Under 35 USC § 112

Claims 4 and 12 have been rejected under 35 U.S.C. § 112, ¶ 1 as allegedly failing to comply with the written description requirement, and claims 4, 14, 16 and 19 have been rejected under 35 U.S.C. § 112, ¶ 2 as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, the Examiner has alleged that "[w]ith regard to claim 4, the Examiner does not find support for the new limitation 'a flat surface of one of the at least two interconnected disks comprising the storage glass material.'" (August 5, 2008 Office Action, p. 3, § 5). Applicants respectfully traverse this allegation and submit that support for the amendment may be found throughout the originally filed specification, drawings and claims. By way of example only, Applicants direct the Examiner's attention to p. 9, ¶ 1-2 and Figure 1 of the originally filed specification and drawings..

The Examiner has further alleged that "[w]ith regard to claim 12, the Examiner does not find support for changing that the information and data 'consist of a spatial arrangement...' to 'comprise a spatial arrangement.'" (August 5, 2008 Office Action, p. 3, § 5). Applicants respectfully traverse this allegation and submit that support for the amendment may be found throughout the originally filed specification, drawings and claims. By way of example only, Applicants direct the Examiner's attention to p. 3, ¶ 2 of the originally filed specification, beginning, "By way of greater or lesser doping...".

Applicants further submit that support for both claim elements may be found elsewhere and throughout the originally filed specification, drawings and claims. Accordingly, Applicants respectfully request reconsideration and withdrawal of this basis of rejections.

Claims 4, 14, 16 and 19 have been rejected under 35 U.S.C. § 112, ¶ 2 as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner has indicated particular informalities in the claims. Applicants have amended claims 4, 14, 16 and 19 to correct informalities and provide clarification. Accordingly, Applicants respectfully request reconsideration and withdrawal of this basis of rejections.

### **Rejections Under 35 USC § 103**

Claims 1, 2, 4, 5, 7, 9, 10, 12-17, 19 and 20 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Wu (U.S. Patent No. 5,078,771; hereinafter, "Wu") in view of Nomura et al., "Super-Resolution Read-Only Memory Disk with Metal Nanoparticles or Small Aperture," Jap. J. Appl. Phys. Pt. 1, vol. 41 (3B), pp. 1876-1879 (March 2002) (hereinafter, "Nomura"). Applicants respectfully traverse the Examiner's rejections and submit that the Examiner has not established a *prima facie* case of obviousness and that the pending claims are patentably distinct from the cited references, taken alone or in combination, for at least the following reasons.

MPEP § 706.02(j) prescribes that a rejection under 35 U.S.C. § 103 should set forth:

- (i) the relevant teachings of the prior art relied upon,
- (ii) the differences in the claim over the applied references,
- (iii) the proposed modification of the applied references to arrive at the claimed subject matter, and
- (iv) an explanation as to why the claimed invention would have been obvious to one of ordinary skill in the art at the time the invention was made.

Applicants submit that the rejections in the pending Office Action do not establish each of these requirements.

Applicants submit that the rejections in the August 5, 2008 Office Action fail to establish the relevant teachings of the prior art relied upon and differences in the claim over the applied references by not addressing every claim limitation and by over-generalizing the cited references. The MPEP prescribes that, "when evaluating the scope of a claim, *every limitation in the claim must be considered*," [§ 2106 II(C), emphasis added] and, "*All words* in a claim must be considered in judging the patentability of that claim against the prior art." [§ 2143.03, emphasis added].

By way of example only, Applicants note that the pending rejection concedes that "Wu fails to specifically disclose or render obvious the polymer layer and two interconnected disks of claim 1, and the additional specific structures and arrangements of said additional structures in applicants' claims 7, 9, and 10." (August 5, 2008 Office Action, pp. 5-6, § 9). However, the pending rejection proceeds to allege that "Nomura et al. disclose the structure of an optical recording medium in their Figure 5," (August 5, 2008 Office Action. p. 6, § 9). Applicants respectfully traverse this argument and submit that, like Wu, Nomura also "fails to specifically disclose or render obvious ... the additional specific structures and arrangements of said additional specific structures in applicants' claims." Specifically, Applicants note that the pending rejection has not indicated any component of Nomura as allegedly being analogous to "a donor medium for metallic ions" as recited in independent claims 1 and 13, much less "the storage glass material upon which is arranged on at least one side a donor medium for metallic ions," as recited in the independent claims. In fact, Nomura does not discuss doping at all, but merely uniform sputtering of metal on the backside of a reflective layer covering a glass

substrate in order to avoid diffraction limitations (see Nomura, generally). As neither Wu nor Nomura "specifically disclose or render obvious ... the additional specific structures and arrangements of said additional specific structures in applicants' claims," Applicants respectfully request reconsideration and withdrawal of this basis of rejections. Should the Examiner maintain the rejection, Applicants respectfully request clarification as to how the Examiner believes specific cited portions of each reference are allegedly analogous to each claim element, with a showing of specific correspondence between citations and elements.

Applicants further submit that the pending rejection has failed to address claim elements and/or over-generalized cited references with respect to dependent claims as well. By way of example only, Applicants direct the Examiner's attention to dependent claim 16, which recites, *inter alia*, "in a second step, growth of metallic particle nuclei into a metallic particle aggregation occurs by resonance-enhanced absorption of radiation." The pending rejection states, "[w]ith regard to claim 16, Wu discloses a variety of laser useful for recording onto the optical recording medium .... Included in this is a CO<sub>2</sub> laser (col. 38, lines 5-13), which applicants specifically mention in their specification (page 6, lines 4-10) as completely appropriate for using to record on their equivalent recording medium." (August 5, 2008 Office Action, p. 7, § 9). Applicants respectfully traverse this argument and submit that the pending rejection has not even attempted to put forth a *prima facie* showing of anticipation or obviousness of the claim elements. The process described in claim 16 includes "growth of metallic particle nuclei into a metallic particle aggregation occurs by resonance-enhanced absorption of radiation," however the pending rejection has not even addressed this claim element. Instead, it has merely alleged a correspondence between a laser described in Wu and one discussed in Applicants' specification. At no time does the pending rejection (or, for that

matter, the cited references) discuss "metallic particle aggregation" occurring "by resonance-enhanced absorption of radiation." Applicants submit, therefore, that the pending rejection has failed to consider "every limitation in the claim" and "all words in the claim," as required, *inter alia*, by MPEP § 2106 II(C) and § 2143.03. Applicants submit that the pending rejection has made similar generalizations for other dependent claims as well. Accordingly, Applicants are unclear as to how the Examiner believes the cited references allegedly discuss or render obvious particular elements of the pending claims. MPEP § 706 recites that, "[t]he goal of examination is to clearly articulate any rejection early in the prosecution process so that the applicant has the opportunity to provide evidence of patentability and otherwise reply completely at the earliest opportunity." As the pending rejection fails to consider "all words in the claim" and to clarify how the Examiner believes the cited references allegedly discuss or render obvious "every limitation in the claim[s]," Applicants submit that a *prima facie* showing of obviousness has not been made and respectfully request reconsideration and withdrawal of this basis of the Examiner's rejection. Should the Examiner maintain the rejection, Applicants respectfully request clarification as to how the Examiner believes each specific limitation of the claims is allegedly discussed or rendered obvious by the cited references. Applicants respectfully submit that a verbatim recitation of each claim element followed by a specific citation to the references would be very helpful to Applicants in better understanding and responding to the Examiner's position.

Although Applicants maintain that the claims in their original form are in condition for allowance and explicitly reserve the right to add/pursue the claims as originally filed at a later date and/or in one or more continuation applications, Applicants have amended independent claims 1 and 13 to provide clarification and to better track current business

practices. Amended claim 1 recites, *inter alia*, "whereby by irradiation with a focused laser beam, metallic ions are locally transferred from the donor medium into the storage glass material," and amended claim 13 recites, *inter alia*, "wherein by means of irradiation of the storage glass material by focused electromagnetic or particle irradiation local doping of the storage glass material is carried out." Applicants submit that neither Wu, which describes a process for uniform doping of a glass article (see, e.g., Wu, col. 4, line 53 to col. 5, line 15), nor Nomura, which describes non-local sputtering of metal nanoparticles to form a granular film (see, e.g., Nomura, § 2.1), taken alone or in combination, discuss or render obvious at least these claim elements. Applicants further submit that the "Bit by bit erasure of high-energy-beam darkened image" described in Wu at col. 34, line 51 to col. 35, line 15 and referred to by the Examiner in his response to Applicants' remarks (August 5, 2008 Office Action, pp. 11-12, § 11) constitutes an erasure of darkened areas by "heat at temperatures exceeding the redissolution temperature of silver particles/specks" (Wu, col. 34, lines 56-57) and is not analogous to "metallic ions are locally transferred from the donor medium into the storage glass material," or to, "local doping of the storage glass material," as recited in amended independent claims 1 and 13 respectively. Dissolution of particles/specks of metal is simply not analogous to "local doping". Applicants further submit that the system described by the claim element, "whereby by irradiation with a focused laser beam, metallic ions are locally transferred from the donor medium into the storage glass material," is structurally distinct from structures described in both Wu and Nomura, taken alone or in combination, as neither reference discusses "local doping". Accordingly, Applicants respectfully request reconsideration and withdrawal of this basis of rejections. Should the Examiner maintain the rejection, Applicants respectfully request clarification as to how the Examiner believes Wu and Nomura allegedly discuss "whereby by

irradiation with a focused laser beam, metallic ions are locally transferred from the donor medium into the storage glass material," and, "wherein by means of irradiation of the storage glass material by focused electromagnetic or particle irradiation local doping of the storage glass material is carried out," as recited respectively in independent claims 1 and 13.

Applicants further submit that the pending rejection has impermissibly grouped together pluralities of claims in common rejections that are not equally applicable to all claims in the groups. MPEP § 707.07 (d) prescribes that, "[a] plurality of claims should never be grouped together in a common rejection, unless that rejection is equally applicable to all claims in the group." (emphasis added). By way of example only, Applicants note that the pending rejection has grouped together claims 1, 4, 5 and 13 in a common rejection (August 5, 2008 Office Action, pp. 4-7, § 9). However, the rejection is clearly not "equally applicable to all claims in the group." For example, claim 1 is directed to a "storage medium" and the Examiner has based part of the rejection on the characterization of claim elements as "product-by-process limitation[s]" (August 5, 2008 Office Action, p. 5, § 9). In fact, in response to Applicant's arguments traversing this rejection (see, May 20, 2008 Response, p. 15, ¶ 3 to p. 17, ¶ 2), the pending rejection has specifically relied upon this characterization of claim elements as "product-by-process limitation[s]" (see August 5, 2008 Office Action, pp. 9-10, § 11). However, claim 13 is directed to a "process" and, accordingly, the rejection's product-by-process argument is manifestly inapplicable thereto.

In another example, claims 4 and 5 recite elements not recited in claims 1 and 13, e.g., "metallic ion doping is arranged on at least one side near a flat surface," (claim 4) or, "the metallic ions are selected from the group comprising of silver, gold, platinum, and copper," (claim 5). Therefore, the rejection cannot apply equally to all claims in the group. The pending

rejection has repeatedly grouped claims in this impermissible manner, and Applicants are confused as to which claims and claim elements the Examiner has applied citations and/or arguments in the pending office action. MPEP § 706 recites that, "[t]he goal of examination is to clearly articulate any rejection early in the prosecution process so that the applicant has the opportunity to provide evidence of patentability and otherwise reply completely at the earliest opportunity." Applicants submit that, by impermissibly grouping claims under a common rejection that is not equally applicable to all claims in the group, the pending rejection has not clearly articulated the rejection. Accordingly, Applicants respectfully request that, should the Examiner maintain the rejection, that he address each claim individually, with specific correspondence shown between claim elements and aspects of the cited references.

Furthermore, Applicants submit that the pending rejection has failed to properly set forth the differences in the claims over the applied references and to explain why the claimed invention would have been obvious to one of ordinary skill in the art at the time the invention was made by proposing modifications to cited art that teach away from such modifications and by not providing a discussion of the level of ordinary skill in the art.

MPEP 2143.01 (V) prescribes, "the proposed modification cannot render the prior art unsatisfactory for its intended purpose," and, "[i]f the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." Applicants submit that the modifications of the cited art suggested by the pending rejection would render the cited art systems inoperable and unsuitable for their stated purposes. In the pending rejection, the Examiner acknowledges that "Wu fails to specifically disclose or render obvious the polymer layer and two interconnected disks of claim 1, and the additional specific structures and

arrangements of said additional structures in applicants' claims 7, 9, and 10," but goes on to allege, "Nomura et al. disclose the structure of an optical recording medium in their Figure 5," and that, "[s]ince Nomura et al. and Wu are both drawn to optical recording media featuring layers with dispersed metal particles therein; it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the glass substrate with the IIES layer of Wu into the disk structure Nomura et al." (August 5, 2008 Office Action, pp. 4-5, § 9). Applicants respectfully traverse this argument and submit that Wu and Nomura describe incompatible systems, and that each teaches away from the modifications of those systems proposed in the pending rejection. By way of example only, Applicants direct the Examiner's attention to col. 4, lines 53-55 of Wu, which states, "contacting the surface of the glass article with a Ag<sup>+</sup> ion-containing material, such as an aqueous solution containing Ag<sup>+</sup> ions," and to col. 14, lines 1-12 of Wu, which states,

The ion-exchange reactions can be carried out as follows. The glass articles are immersed into an aqueous ion-exchange solution containing Ag<sup>+</sup> ions and other ingredients, the glass articles together with the aqueous solution are sealed in an autoclave, and heated to a temperature sufficient to effect an ion-exchange reaction between the silver ions in the aqueous solution and the alkali metal ions in the surface layer of the glass .... Thereafter, the HEBS glass articles are removed from the autoclave and washed with distilled water.

Clearly, the sample disk shown in Fig. 5 of Nomura would be unsuitable for and incompatible with at least these processes described in Wu, since the "granular film" which the pending rejection alleges "is analogous to applicants' storage glass material layer" (August 5, 2008 Office Action, p. 6, § 9) is covered on both sides by other layers, and thus would not allow "contacting the surface of the glass article with a Ag<sup>+</sup> ion-containing material, such as an aqueous solution containing Ag<sup>+</sup> ions," as described in Wu. On the other hand, providing the HEBS glass from Wu as the granular film in Nomura's sample disk would not result in

Applicants' claim. Wu describes "the HEBS glass articles are removed from the autoclave and washed with distilled water," so the combination fails to discuss or render obvious at least, "the storage material upon which is arranged on at least one side a donor medium for metallic ions," as recited in independent claims 1 and 13. As the cited references are incompatible, teach away from a combination, and do not yield the claimed system in combination, Applicants submit that sufficient objective rationale has not been provided for the proposed modification and respectfully request reconsideration and withdrawal of this basis of rejections. Should the Examiner maintain the rejection, Applicants respectfully request that he clarify how he believes the HEBS glass from Wu and the sample disk from Nomura could possibly be combined, and how that combination would allegedly yield the elements recited in independent claims 1 and 13.

Applicants also submit that the pending rejection has provided no indication of the level of ordinary skill in the art. MPEP § 2141 (II)(C) states, "Any obviousness rejection should include, either explicitly or implicitly in view of the prior art applied, an indication of the level of ordinary skill." The pending rejection refers to, "one having ordinary skill in the art of the manufacture of optical recording media , " (e.g., August 5, 2008 Office Action, p. 5, § 9) but has provided no indication or discussion of the level of ordinary skill associated therewith. MPEP § 2141.03 (III) states, "The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry." Applicants submit that impermissible hindsight has been applied in asserting obviousness of the various claim elements without providing an indication of the level of ordinary skill. As such, Applicants respectfully request that, if the Examiner maintains this rejection, the Examiner discuss the level of ordinary skill in the art at the time of the invention and clarify how the claimed subject matter would have been obvious to one possessing that level of skill.

Although of different scope than independent claims 1 and 13, Applicants submit that new independent claims 21 and 27 are patentably distinct from the cited references, taken alone or in combination, for at least similar reasons to those discussed above identifying deficiencies in the cited references with respect to independent claims 1 and 13. Furthermore, Applicants submit that claims 2, 4, 5, 7, 9, 10, 12, 14-17, 19, 20, 22-26 and 28, which depend directly or indirectly from independent claims 1, 13, 21 and 27, are also patentably distinct from the cited references, taken alone or in combination, for at least similar reasons to those discussed above identifying deficiencies in the cited references with respect to the independent claims. Accordingly, Applicants respectfully request reconsideration and withdrawal of this basis of rejections for these claims as well.

### **CONCLUSION**

Consequently, the reference(s) cited by the office action do not result in the claimed invention, there was/is no motivation for such a combination of references (i.e., cited references do not teach, read on, suggest, or result in the claimed invention(s)), and the claimed inventions are not admitted to be prior art. Thus, the Applicant respectfully submits that the supporting remarks and claimed inventions, claims 1, 2, 4, 5, 7, 9, 10, 12-17 and 19-28, all: overcome all rejections and/or objections as noted in the office action, are patentable over and discriminated from the cited reference(s), and are in a condition for allowance. Furthermore, Applicant believes that the above remarks, which distinguish the claims over the cited reference(s), pertained only to noted claim element portions. These remarks are believed to be sufficient to overcome the prior art. While many other claim elements were not discussed,

Applicant asserts that all such remaining and not discussed claim elements, all, also are distinguished over the prior art and reserves the opportunity to more particularly remark and distinguish such remaining claim elements at a later time should it become necessary. Further, any remarks that were made in response to an Examiner objection and/or rejection as to any one claim element, and which may have been re-asserted as applying to another Examiner objection and/or rejection as to any other claim element(s), any such re-assertion of remarks is not meant to imply that there is commonality about the structure, functionality, means, operation, and/or scope of any of the claim elements, and no such commonality is admitted as a consequence of any such re-assertion of remarks. As such, Applicant does not concede that any claim elements have been anticipated and/or rendered obvious by any of the cited reference(s). Accordingly, Applicant respectfully requests allowance, and the reconsideration and withdrawal of the rejection(s) and/or objection(s).

If a telephone conference would facilitate prosecution of this application in any way, the Examiner is invited to contact the undersigned at the number provided.

**AUTHORIZATION**

The Commissioner is hereby authorized to charge any additional fees which may be required for consideration of this Amendment to Deposit Account No. 03-1240, Order No. 17233-007.

In the event that an extension of time is required, or which may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account No. 03-1240, Order No. 17233-007.

Respectfully submitted,  
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